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ABSTRACT

The notion of phenomenal causality of C. Kraft (1991) was applied in the formulation of a self-report instrument to measure student perceptions of the dimensions of academic success. Instrument items were inspired by the students themselves in several hours of dialogue. Subjects were 55 male and 49 female black high school students at a summer career workshop in 1992 at Clemson University (South Carolina) for students with high academic rankings and superior performance in college preparatory programs and on national standardized achievement tests. Eight underlying elements that appeared to recur in analyses of student interview protocols were presented to students in all 28 possible pairs within a Thurstone's paired comparison type self-report instrument. The theoretical structure of the data emerged in the form of a graph with all eight statements plotted in two-dimensional perceptual space. The graph is presented as Figure 1, and two tables provide further information about the dimensions. (Contains 8 references.) (SLD)

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Dimensions of Success as Identified by High-Achieving, Black, Pre-college Students

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Introduction

A new generation of self-directed Black learners is emerging within the ranks of pre-college youth. These students are tenacious in their pursuit of academic excellence, and tend to manifest their scholarly energies in the form of a diligent enthusiasm to achieve mastery and more. The old "C for credit" spirit of minimal competency is meaningless in their collective world views. They strive for competence and are driven by persistence, hard work, and a strong sense of strength from within.

To date, Weiner's attributional theory of achievement motivation has been used extensively to identify and explain academic behaviors of this sort (1979, 1983, 1985). According to Weiner, performance outcomes in academic settings can be dependent on a number of causes including self-perceptions of ability, perceived difficulty of tasks, luck, or hindrance and help from others. The three underlying dimensions thought to describe these causes are locus (the cause is either internal or external to the individual), controllability (the cause is subject to control by the individual), and stability (the cause is unchanging or temporary).

Recently, methods of measuring achievement related perceptions have come under scrutiny (Graham, 1989; Stader & Licht, 1992). Assessments of locus of control, for example, are typically obtained with forced-choice paper and pencil self-report instruments, which by nature are somewhat lower in reliability than those obtained by open-ended questionnaires or informal interviews. Kraft comments that a more valid approach would be to allow for the subject's expression of "phenomenal causality" in answering research questions of interest from a uniquely personal viewpoint (1991).

Research methods employed in this study applied Kraft's notion of phenomenal causality in the formulation of a self-report instrument made up of items unknowingly inspired by the students themselves. Several hours of dialogue with them yielded a set of eight key elements that they believed to be essential for academic success. A multidimensional scaling of data obtained with this instrument yielded a distinctly "locus"

oriented graph of the two-dimensional perceptual space where these elements are theoretically defined.

Method

The Sample

Our volunteer study sample was comprised of 104 high school students (55 males, and 49 females) attending the 1992 Summer Career Workshop at Clemson University. Students were rising juniors and seniors, recruited primarily from South Carolina, with some representation from Georgia, North Carolina, Pennsylvania, Alabama, and Maryland. They were selected for participation in the workshop on the basis of high class rankings, excellence in academic achievement in college preparatory programs, and outstanding performance on national standardized achievement tests.

Students were in residence at Clemson for two weeks, and were attending classes designed to prepare academically talented minority students for advancement into higher education. Careers in mathematics, the sciences, engineering, and allied health professions were specifically targeted in the workshop.

In our study, informal interviews were conducted in small group sessions by two University faculty researchers (one black female, and one white female). The goal of the interview sessions was to elicit candid student reports of what they perceived to be the chief determinants of academic success.

Among the researchers' interview questions were, "What do you think is wrong (right) with your school?; "What makes a class your best (worst) class?"; "What are the qualities of a good teacher?"; "Would you prefer a teacher who was the same sex (race) as you are?"; "What are your career goals?"; "Do you find support for your career goals at school?"; "What do you need from your school that you are not getting?"; "Would you go to school if you didn't have to?"; " Are you treated fairly at school?".

Student responses included such statements as, "My best class is when I like the teacher and the subject, and the teacher gives attention."; "A dedicated teacher devotes time, pushes you to do work, stays after to

help, gets parents involved, and lets parents know what's going on."; "Race or sex doesn't matter--just teach me. Teach me what I have to learn."; "It (race and sex) doesn't matter--as long as they've got the goods (are knowledgeable)"; "You can't learn everything from your own kind. Younger (teacher) is okay, older is okay, You've got to be diversified in life...learn different things in different situations."; "I don't want to be thought of as stupid. I want to know how to express myself and communicate--to better myself."; "We need to teach ourselves."; "You've got to have morale within your peer group. Competition is important. So is unity--being unified, having something in common."; "You've got to have support from your friends, young black achievers. Some people think it's not cool to be smart...like selling out."

Instrumentation and Procedure

Eight underlying elements appeared to recur in the analysis of student interview protocols. They were:

A. Knowing I am smart.
B. Working hard.
C. Getting help when I ask for it.
D. Being expected to achieve.
E. Understanding each other.
F. Being with people just like me.
G. Having a supportive family
H. Being treated fairly

The statements were presented to the students in all 28 possible pairs within a Thurstone's Paired Comparison type self-report instrument. The students were asked to rate each pair in terms of similarity, on a Likert scale of 1 (very dissimilar) to 5 (very similar). This method was chosen because it is particularly suited to the task of obtaining measures of "psychological distance" between stimuli (Kruskal & Wish, 1986). These measures (proximities) provided information about the specific attributes on which students judged the similarity of the 8 statements listed in the instrument. Ultimately, the hidden theoretical structure of our data emerged in the form of a graph with all 8 statements plotted in two-dimensional perceptual space.

Results

A matrix of the mean similarity ratings for each of the 28 pairs of statements was used as input data for a multidimensional scaling analysis using the KYST-2 computer program (Kruskal, Young, & Seery, 1973). Inspection of the matrix found in Table 1 indicates that "Working hard" and "Being expected to achieve" were rated as being most similar (Mean = 3.846), while "Being treated fairly" and "Knowing I am smart" were rated as being most dissimilar (Mean = 2.250).

A two-dimensional interpretation was considered optimal for the similarity data, using Kruskal's Formula One (stress = 0.178 in one dimension, and 0.049 in two dimensions). The stimulus coordinates and corresponding plot for stimuli rotated to principal components are found in Table 2 and Figure 1, respectively.

Stimuli regarding academic success are situated in the configuration such that statements on opposite extremes of Dimension One appear to differ most on the attribute of Intellectual Competence, while statements on opposite extremes of Dimension Two seem to differ most on the attribute of Personal Relevance. It seemed reasonable to label the dimensions accordingly.

Table 1

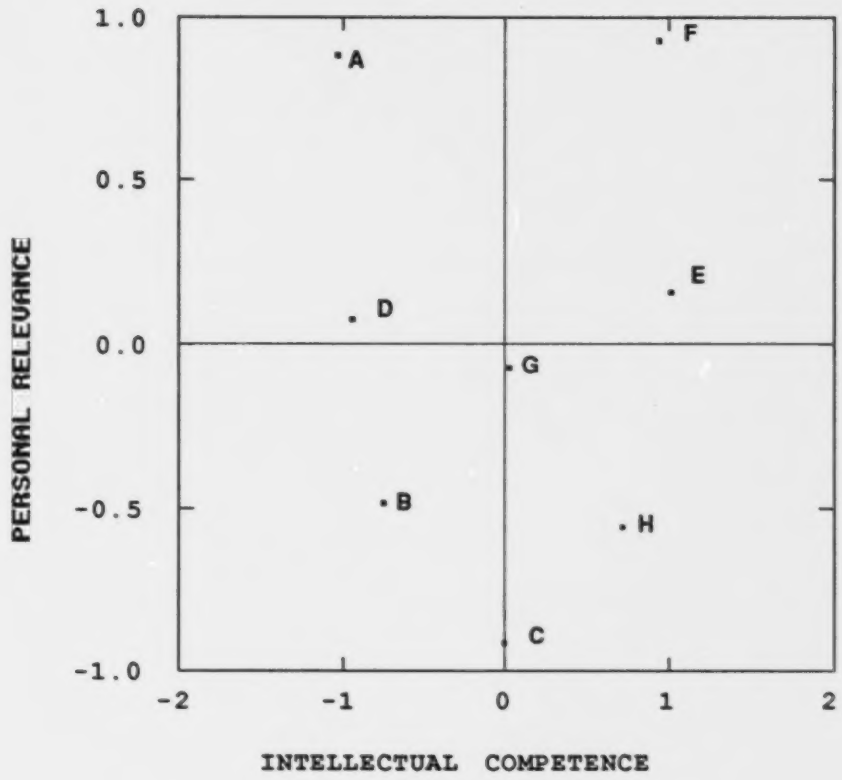
Matrix of Mean Similarity Ratings for Eight Statements

	A	B	C	D	E	F	G	H
A								
B	3.029							
C	2.731	3.202						
D	3.663	3.846	2.740					
E	2.529	2.529	2.962	2.423				
F	2.413	2.462	2.327	2.712	3.154			
G	2.971	3.452	3.750	3.529	3.721	2.740		
H	2.25	3.000	3.317	2.74	3.365	3.154	3.375	

Table 2

Stimulus Coordinates From a Two-dimensional KYST Analysis of Similarity for Eight Statements

STIMULUS	DIMENSION 1	DIMENSION 2
A	-1.033	0.881
B	-0.739	-.487
C	-0.001	-.914
D	-0.939	0.077
E	1.021	0.155
F	0.946	0.920
G	0.021	-.074
H	0.725	-.559



A	Knowing I am smart
B	Working hard
C	Getting help when I ask for it
D	Being expected to achieve
E	Understanding each other
F	Being with people just like me
G	Having a supportive family
H	Being treated fairly

Figure 1. Stimulus coordinates from a two-dimensional KYST analysis of similarity for eight statements regarding perceived requirements for academic success.

Interpretation

Dimension 1: The horizontal axis of our plot represents the dominant dimension (Intellectual Competence) defined by the student perceptual data. It is distinctly bipolar with respect to the quality of locus (internal or external to the individual). Statements interpreted on this dimension reflect the students' own assessments of intellectual competence relative to an orientation to self (internal) and to others (external). This is illustrated by the statements "Knowing I am smart" at one extreme and "Understanding each other" at the other. The statistically neutral statement "Getting help when I ask for it" appears to have both internal and external implications--the student initiates getting help (internal) from others (external).

Dimension 2: The vertical axis of the plot represents the subordinate dimension Personal Relevance, and is also bipolar with respect to the quality of locus. Statements interpreted on this pole each are scaled according to the level of practical importance or relevance to the individual. "Being with people just like me" implies a comparison of others to oneself (an internal view), while "Getting help when I ask for it" focuses on the individual's perception of himself as the recipient of the good will of others (external).

The statement "Having a supportive family" emerged as neutral on both axis. It is evident that the content of this item has little to do with Intellectual Competence or Personal Relevance as we have defined it, and thus is shown by the data to have an almost zero origin in the graph. It would be advisable to analyze this variable in a more relevant context, or delete it altogether from future analyses like this one.

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